

The Rectal Examination

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A wag once remarked, with considerable truth, that a consultant is a doctor who makes a rectal examination.

—R. H. MAJOR, M.D.

Definition

Rectal examination consists of visual inspection of the perianal skin, digital palpation of the rectum, and assessment of neuromuscular function of the perineum.

Technique

The clinical situation and experience of the examiner will often dictate which of several methods to employ in performing the rectal examination. In the *lithotomy position*, the patient is supine with the legs drawn in toward the trunk and the knees allowed to fall out to the side. This position is customarily used when examining the pelvic organs in women and may offer a better examination of the anterior rectum. The *lateral decubitus*, or *Sim's position*, provides optimal examination when the patient is too ill or otherwise unable to assume other positions. The patient lies on the left side with the buttocks near the edge of the examining table or bedside with the right knee and hip in slight flexion. The *proctologic (knee-chest or prone jackknife) position* is the preferred position in which to examine the perineum and rectum properly. In this position, the patient can easily undergo further studies such as anoscopy and sigmoidoscopy because of easier access to the anorectum. Regardless of the position used, the rectal examination involves both inspection and palpation. First, using a gloved hand, the examiner inspects the buttocks for fistulous tracts, the skin tags of hemorrhoids, excoriations, blood, and rectal prolapse. The patient then is asked to bear down to check again for rectal prolapse and for proper descent of the perineum, the area between the thighs from the coccyx to the pubis. In normal individuals, the perineum lies about 2.5 cm above the ischial tuberosities. When straining at stool, the perineum will descend approximately 1.5 cm or to a level about 1 cm above the ischial tuberosities. Next, the examiner applies firm pressure on the ischial tuberosities in order to evaluate early abscess or fistula formation found in inflammatory bowel disease. With pressure still applied to the perineum, the patient is asked to bear down again in order to obtain further evidence of an abscess or fistula.

The next step of the rectal examination involves the assessment of neuromuscular integrity. First, each side of the buttocks is scratched with the gloved finger to elicit the superficial anal reflex (the anal "wink"), a function of L₁ and L₂. Next, using a generous amount of water-soluble gel for lubrication, the gloved index finger is inserted gently into the rectum. While the patient consciously acts to resist defecation (analogous to stopping in midstream during urination), the examiner should evaluate the anterior con-

traction of the puborectalis muscle and the contraction of the external anal sphincter. The patient then relaxes, and the examiner pushes the puborectalis muscle posteriorly, noting the relaxation of the internal anal sphincter. Finally, the patient bears down again, expelling the examining finger, causing the puborectalis muscle to move posteriorly and the internal anal sphincter to relax. This maneuver often permits palpation of the cervix in women and allows assessment of tenderness of this organ.

The final step of the rectal examination assesses anatomic integrity by digital palpation. Once again, the gloved finger is slipped gently into the rectum, and the entire circumference of the rectum is systematically palpated in two stages. The first stage involves the area 1 to 2 cm beyond the external sphincter (the length of the fingerpad), and the second stage deals with the remainder of the rectum within reach of the examining finger, about 7 or 8 cm. Attention should be given to the presence of masses, tenderness, hemorrhoids, fissures, ulcers, and the color and consistency of the stool, with special emphasis on the posterior rectal shelf. In men, the prostate, its size, consistency, and presence of nodules should be noted (see Chapter 192), including assessment of the area of the rectovesicular pouch. In women, the rectouterine pouch of Douglas should be palpated for masses or tenderness. Bimanual examination (rectoabdominal or rectovaginal) often facilitates examination of the lower abdomen and genitourinary structures.

Basic Science

The rectum begins at the termination of the sigmoid colon about 12 cm from the anal verge (Figure 97.1). Two muscle bundles, known as the internal and external anal sphincters, participate in defecation. The internal anal sphincter is an enlargement of the circular smooth muscle of the colon and functions involuntarily. The external anal sphincter consists of striated muscle bands under the voluntary control of the puborectalis muscle. The rectum has the same innervation as the bladder; the hypogastric nerves innervate the internal anal sphincter, and the internal pudendal nerve (S₂–S₄) operates the external anal sphincter. Because of the common innervation, dysuria is a common complaint associated with rectal disorders.

An important landmark both anatomically and clinically is the pectinate line where the anus and rectum merge, approximately 3 to 4 cm from the skin. It serves as a demarcation for venous and lymphatic drainage and for the nerve supply. Above the pectinate line, the veins drain into the portal and caval systems, sympathetic nerves are present (pain is absent), and lymph drains to the superior rectal and

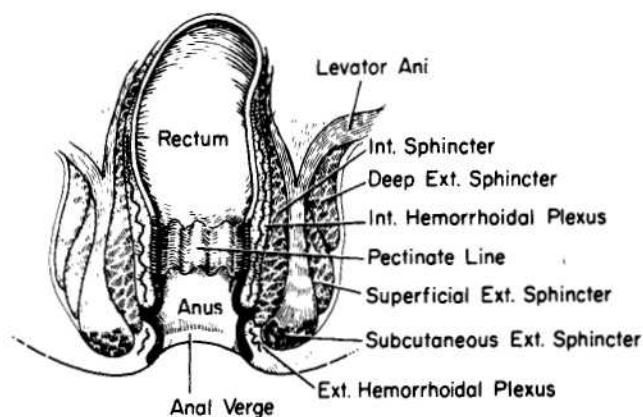


Figure 97.1

Anatomy of the anus. (Reproduced with permission from Lieberman DA. Common anorectal disorders. *Ann Intern Med* 1984; 101:838.)

iliac nodes. Below the pectinate line, the veins drain into the caval system alone, innervation is through somatic nerves (pain is present), and lymph drains into the inguinal nodes.

The rectum functions to permit defecation in a voluntary fashion. Peristalsis propels the stool from the sigmoid colon into the rectum. Increased intraluminal pressure causes involuntary relaxation of the internal anal sphincter followed by reflex contraction of the external anal sphincter, preventing incontinence while providing awareness of imminent defecation. The external anal sphincter then relaxes in a voluntary fashion, expelling the feces. Studies suggest that the evacuative process is facilitated by larger fecal bulk, providing an impetus for encouraging patients to consume diets high in fiber and bulk.

Clinical Significance

As Major alluded as long ago as 1937, many otherwise puzzling clinical situations are resolved when a rectal examination is made. Indeed, the history and physical examination are incomplete without the rectal examination; it should not be omitted. Any person with abdominal complaints (e.g., abdominal or rectal pain, diarrhea, constipation, nausea, vomiting, or bleeding) needs a rectal examination to direct further diagnostic and therapeutic maneuvers appropriately. Although disagreement exists as to what age and how often, the American Cancer Society recommends yearly rectal examination and testing for occult blood in the stool for all persons after age 40 as a screening procedure for both colorectal and prostate carcinoma.

Inspection of the buttocks often provides clues to many disorders, including skin tags from hemorrhoids, fistulous tracts, and fissures in patients with inflammatory bowel disease, rectal prolapse, and superficial ulcers caused by herpes simplex or syphilis. The perianal skin may also be affected by generalized disorders including psoriasis and vitiligo or infective processes such as syphilitic dermatitis and candidiasis.

The assessment of neuromuscular function is necessary in many situations because simple palpation of the external anal sphincter is a poor measure of strength and cannot diagnose dysfunction. Patients with fecal incontinence often complain of "diarrhea" because the anal canal is unable to

handle a normal volume of stool, or the sensation of the urge to defecate is inadequate. These individuals often provide a history of traumatic childbirth or surgical repair of hemorrhoids with subsequent disruption of the sphincter musculature or innervation. Upon examination, the descent of the perineum is often much greater than normal, often dropping below the plane of the ischial tuberosities. In addition, fecal incontinence may be the first symptom of serious systemic diseases such as neuropathies, spinal cord tumors (primary or metastatic), or multiple sclerosis.

Palpation of the rectum can reveal ulcers from herpes, syphilis, or inflammatory bowel disease, as well as fistulae or fissures not seen on inspection. Diligent palpation of the rectum should be made to determine the presence of masses because 22% of colorectal cancers arise from the rectum, and this organ may be the site of metastatic disease as well. Masses are not all neoplastic and may be abscesses. Fluctuant consistency of the mass and the presence of fever suggest abscess.

Tenderness is one of the more helpful signs on rectal examination. The location and degree of tenderness may provide additional or convincing evidence of such disorders as prostatitis, pelvic inflammatory disease, tubo-ovarian abscesses, ovarian cysts, ectopic pregnancy, and inflammatory bowel disease. Rectal tenderness in suspected appendicitis has been touted as an important diagnostic clue, but the weight of evidence suggests that this finding is of little help.

The importance of noting the consistency, color, and presence of frank or occult blood in the stool cannot be overemphasized. Elderly patients, with or without a history of chronic constipation, may present with diarrhea that rectal examination will discover to be due to fecal impaction. Black stools result from degraded blood (melena), iron, licorice, bismuth, rhubarb, or overindulgence in chocolate cookies. Red-colored stools may be due to brisk bleeding known as hematochezia (usually distal to the ligament of Treitz), whereas patients under treatment for tuberculosis may complain of red- or orange-colored stools due to rifampin. One of the first symptoms of hepatobiliary disease is the development of tan stools and dark urine. Very rarely, a patient with carcinoma of the ampulla of Vater presents with a complaint of silver stools.

Busy practitioners often omit the rectal examination for a variety of reasons. The procedure allegedly takes too much time, causes discomfort to the patient, and is not aesthetically pleasing. In many diseases, however, examination of the rectum will point the physician in the proper diagnostic direction. This, in turn, may obviate the need for expensive and unnecessary laboratory and/or radiologic evaluation. The diligent, conscientious, and thorough physician will make the rectal examination a necessary part of a complete patient evaluation. An anonymous quote is relevant: "For most diagnoses all that is needed is an ounce of knowledge, an ounce of intelligence, and a pound of thoroughness."

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